

Patent Claims:

1. Method for the operation of a hydraulic brake system with an integrated parking-brake function for motor vehicles having two vehicle axles, said system substantially comprising a pedal-operated pressure generator (31), at least one hydraulic pump (4), an operating element (12) which is connected to an electronic control and regulation unit (9), and wheel brakes (2, 3) provided with inlet and outlet valves (13, 14, 17, 18), with the wheel brakes (2) associated with the second vehicle axle including a means for executing a parking-brake operation,
characterized in that the hydraulic pump (4) is driven in such a fashion that the pressure that is necessary to initiate and/or terminate a parking-brake operation is built up with a minimum possible pressure-increase gradient.
2. Method as claimed in claim 1,
characterized in that the driving mode of the hydraulic pump (4) is determined by the operator.
3. Method as claimed in claim 2,
characterized in that when the operating element (12) is shortly actuated by the operator, the hydraulic pump (4) is driven in such a fashion that the pressure required to execute a parking-brake operation is built up more slowly in the wheel brakes (2) associated with the second axle than is the case with an actuation of the operating element (12) over a long period of time.

4. Method as claimed in any one of the preceding claims, characterized in that the pressure that is introduced during a service brake phase in the wheel brakes (2, 3) is used to initiate a parking-brake operation.
5. Method as claimed in claim 1 or 4, characterized in that at least the following steps are performed in the transition from a service-brake operation to a parking-brake operation:
 - I. Actuation of the operating element (12) by the operator;
 - II. Closing the inlet valves (17) of the wheel brakes (3) associated with the first axle;
 - III. Pressure build-up performed by the hydraulic pump (4) in the wheel brakes (2) associated with the second axle;
 - IV. Closing the inlet valves (13) and opening the outlet valves (14) of the wheel brakes (2) associated with the second axle and activation of the means for performing a parking-brake operation.